

What is claimed is:

1. A method for etching a metal layer on which an oxide-based ARC layer is coated in a semiconductor device
5 comprising the step of:

performing a dry cleaning process by using a Cl_2/CHF_3 based gas, after dry cleaning the ARC layer by using an oxide-based gas.

- 10 2. The method of claim 1, wherein a flow rate of the Cl_2 based gas ranges from about 100 sccm to about 200 sccm.

3. The method of claim 1, wherein a flow rate of the CHF_3 based gas ranges from about 5 sccm to about 30 sccm.

15

4. The method of claim 1, wherein a pressure of the dry cleaning process ranges from about 8 mTorr to about 50 mTorr.

5. The method of claim 1, wherein a source power of the
20 dry cleaning process ranges from about 500 W to about 1200 W.

6. The method of claim 1, wherein a bias power of the dry cleaning process ranges from about 0 W to about 10 W.

- 25 7. The method of claim 1, wherein the dry cleaning process is performed for about 5 seconds to about 30 seconds.